



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/468,489	12/20/99	ZHANG H	1612.63479

PATRICK G BURNS ESQ
GREER BURNS & CRAIN LTD
SEARS TOWER SUITE 8660
233 S WACKER DRIVE
CHICAGO IL 60606

MM92/1011

QUACH, T

2814

EXAMINER

ART UNIT

PAPER NUMBER

DATE MAILED:
10711700

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/468,489

Applicant(s)
Zhang

Examiner
Quach, T.

Group Art Unit
2814



☒ Responsive to communication(s) filed on Jul 25, 2000

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire one month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-21 is/are pending in the application.

Of the above, claim(s) 18-21 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☐ Claim(s) _____ is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims 1-17 are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 2814

DETAILED ACTION

Applicant's election with traverse of group I, process claims 1-17 in Paper No. 4 is acknowledged. The traversal is on the ground(s) that there is no serious burden as the search for group I would not be different from that of the whole application, and the same inventive features are presented in the respective claims. This is not found persuasive because as delineated in Paper No. 3, the product as claimed can be made by another and materially different process as delineated; alternatively, a different product can result, e.g., the product as delineated in Figs. 14A-14F and 15A-15C as opposed to the product delineated in Figs. 5A-5G and Figs. 8A-9C or 10 to 10F thus further evidencing the inventions being distinct and requiring serious burden; the product and process invention correspond to separate status in the art and require the different classification as delineated.

The requirement is still deemed proper and is therefore made FINAL.

Regarding the process claims 1-17, this application contains claims directed to the following patentably distinct species of the claimed invention:

- the species of the claimed invention in claims 1-6 which corresponds to forming plurality of island shaped semiconductor layers on substrate having insulative surface, implanting dopant into first regions at outsides of region designated for a channel region directly or through a thin insulation film whose thickness is equal to or less than 50 nm by ion implantation to form lightly doped regions, and implanting dopant into regions at outsides of said first regions in each of said semiconductor layers directly or through said insulation film to form heavily doped source/drain

Art Unit: 2814

regions as in claim 1 and the further implant parameters delineated in claims 2-4 and the laser beam irradiation as in claim 5 and 6.

- the species of the claimed invention in claims 7-9 which correspond to the process employing the insulation and the gate electrode layer, patterning the layers so that each of the semiconductor layers is partially exposed at the both sides of each of said gate insulation film, and carrying out the ion implant using the patterned insulation and the gate electrodes as mask, e.g., as in the embodiment depicted in Fig. 1A.

- the species of the claimed invention in claims 10-13 which correspond to the process comprising the shield on sidewalls of the gate electrode and gate insulation film including by anisotropic etching, e.g., as in the embodiment depicted in Figs. 9A-9B.

- the species of the claimed invention in claims 14-15 which correspond to the process employing a transparent substrate and the gate electrode therein and a transparent gate insulation on the substrate covering the gate electrodes, the formation of the photoresist on the substrate and its use as a mask, e.g., as in the embodiment depicted in Figs. 14A-15C.

- the species of the claimed invention in claims 16-17 which correspond to the process employing underlying insulation on a glass substrate, amorphous silicon therein, its irradiation to form polysilicon, its patterning, formation of lamination including a lower insulation and an upper conductive layer on the glass substrate, formation of a first mask to pattern the gate electrode and the gate insulation, implant dopant lightly using the gate insulation and the gate electrode as mask, forming second mask on sidewalls of the polysilicon layers, implanting ions using second mask as

Art Unit: 2814

mask to form heavily doped source/drain regions, removing second mask, irradiation of the lightly doped regions and source/drain regions, e.g., as in the embodiment depicted in Figs. 5A-5G.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.


Art Unit: 2814

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Quach whose telephone number is (703) 308-1096. The examiner can normally be reached on Monday through Friday from 8:30 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri, can be reached on (703) 306-2794. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Tuan Quach
Primary Examiner